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1.1 Introduction

It is being repeatedly told that this is the modern era of learning where science and technology is fast growing and resulting in new knowledge, skills and attitudes; and it gives a major challenge before educational planners, administrators, researchers, teachers and managers of education on international standards. In this context, a global trend obviously is the increasing use of modern Information and Communication Technology in Education in general and Language Learning in particular.

Language Learning is somewhat a difficult and complicated process. In the field of Language teaching, Educators have to struggle hard to find way to make language learning enjoyable for the learners. Different activities, games, poems and fascinating stories have helped language teachers to accomplish this aim through many years. But as time proceeds, the advancement of Information Technology (IT) has varied the ways of language learning. However, due to cost-effectiveness of digital learning and the widely spread of the Internet. It is foreseen that Digital Learning becomes one of the important method in the future learning activities.

At the beginning of 1980s, Technology came into use in the Language Classrooms with the use of Films, Televisions, Language Lab having Video Tapes, Audio Cassettes and last but not the least, Computers. Computers have become essential part of life. Modern teachers are aimed at using computers or multimedia to deliver good amount of materials to the students. As the development of IT, many areas of English learning have employed computers as learning tool. Especially for language learning, some Computer Assisted Language Learning (CALL) software were introduced in the form of drill-and-practice in 1998.

Now-a-days 'CALL' is in the air in language-teaching. CALL, i.e., Computer Assisted language learning refers to the use of computers specifically for the purposes of learning. Many CALL programmes are presently used in language classrooms for teaching grammar, speaking and other skills. Computers can combine the advantages of different teaching slides like pictures and charts as well as audio-visual aids. Multimedia presentations can be very effective to teach grammar, vocabulary and the four skills-Listening, Speaking, Reading, and writing. A multimedia presentation using programmes like Microsoft Power Point can be very effective to create a deep impression in the minds of learners. There are a number of readymade CDs available for teaching English. In most of these CDs, there is a story line and the players are asked to play games and answer the questions related to the story. They can

choose to read the story, listen to the audio or watch the view clippings. They can practice grammar, improve vocabulary; develop listening, speaking, reading and writing skills. This leads the investigator to make up her mind to find out whether; a multimedia package is really effective for developing four language skills.

1.2 Rationale of the Study

Technology based leaning is the need of today's world. It affects each and every domain of man's life therefore. So many researches and project works have been done in this area. Apart from these, so many articles have been published in different margarines which raised the issues related to new technology, multimedia, etc. Here, the investigator had reviewed Ya Hua Chen (2004)[1], Acharya (2004)[2], Kimura (2006)[3], Liu (2007)[4], Kaltenboeck (2007)[5], Abuseileck (July 2008)[6], where she had found out the fact that Information Techonology an Computers have enriched the teaching-learning process. By seeing, articles of Abraham B. (3July, 2008)[7], Abuseileck, A.F. (2008)[6], Kessler G. & Plakans, L. (3 July, 2008)[8]. These studies prove that CALL (computer assisted language learning) is more advantageous to both students and teachers. It allows the teachers to give attention to an individual student being a fascilitator and the student proceeds according to his/her own pace. Ya Hua Chen (2004)[1], the investigator concluded that computer-mediated communication tools can benefit for learning and developing communication skills into learners. The same observation had been found in the article written by Acharya (2004)[2]. According to him, ICT (Information and Communication Technology) in English language learning is very useful and have great effect on the teachers' mind. It shows that CALL has been positively effective in the process of teaching and learning of a language.

The studies conducted by Ilangovan (1997)[9], Jung (1999)[10], Yadav (2004)[11], Das (2005)[12], Badiyani (2005)[13], Singh (2007)[14], which dealt with English language teaching along with the use of computer. They also support the previous related literature reviews. The investigator could find that most of the studies are based on the teaching of English, they are either for the University Students or of early stage of child education. In addition most of the studies also show that CALL and multimedia programme proved to be effective even in science teaching and various aspect of English language. But as per her knowledge, she couldn't find a single study done in the area of Language Skills development through multimediated CALL programme.

Apart from these, the investigator reviewed various past studies related to teaching various aspects of English through different methods and ultimately she came to conclusion that in the sphere of teaching and learning of foreign language i.e. English, quite a number of methods and approaches are available. By reviewing Kumar (1990)[15], Sharma (1996)[16], Hsu (1999)[17], Das A. (2005)[12], Sakhiya (2006)[18] the investigator came to know the fact that language games and self-learning materials proved to be effective for learning different aspect of English language. But she couldn't find single study which dealt with multimedia approach to learn and develop English language skills.

The investigator had also observe previous studies of Subramuniam (1981)[19], Makwana (1991)[20], Joshi (1992)[21], Almasy (1992)[22], Pasty ALLENE (1997)[23], Danikhel (1998)[24], Kashy (2001)[25], Sukhaiya (2004)[26] which were regarding with English language skills. By reviewing these studies, the investigator found that Makwana (1991)[20], Joshi (1992)[21], Almasy (1992)[22] had done their investigations in the area of writing skill whereas, Pasty ALLENE (1997)[23], Danikhel (1998)[24], Kashy (2001)[25] had done their investigations in the area of reading skill whereas Subramaniam (1981)[19] and Sukhadia (2004)[26] had done studies on All four language skills. The present investigation is identifical to Subrahmaniam and Sukhadia in the selection of Language skills as the investigator had selected all four language skills. In the case of tools Makwana (1991)[20] has used diagnostic test to diagnose the students' weakness in the English writing, Danikhel (1998)[24] has used Reading Comprehension and Reading Vocabulary test which was develop by him and he had also used standardized tools to assess study habit Academic Achievement Motivation, Intelligence personality, Whereas Kashy (2001)[25] had used Reading Readings Test (RRT), Picture Story Telling Test (PSTT), Reading Test (RT), Attitude scale for teachers and interview schedule for parents. And as far as present investigation is concerned, the investigator is going to use two standardized tools, i.e. K.G.Desai Verbal – Non verbal Intelligence Test to measure students' intelligence an 'Adhyayan saily Sansodhini' to measure students' Learning style. Apart from these, the investigator is going to use self-made tools for assessing reading, writing, speaking and listening skill. Opinionnaire and student's Dairy will be made and use to collect the opinions of students regarding experiment. In this case, the present investigation is somewhat indentified with post studies and different in some aspects.

If we reviewed past studies, the investigator came to conclude that in the matter of research design, the present investigation is different. Joshi (1992)[21] had employed quasi-experimental design namely, "Three equal group design" even Kashy (2001)[25] had also employed the

same. Sukhadiya (2004)[26] had employed single group pretest-posttest design. Whereas the investigator decided to use "Solomon Four group design for the present investigation, which is different from the other studies.

The related previous studies also present that multimedia technology gives new opportunities in teaching – learning process as well as activities that many not be experience by traditional teaching method. The investigator had reviewed several studies done in the field of multimedia technology but she couldn't find single study that were related with the use of multimedia for developing Language Skills in English. Keeping in mind all the above presented discussions, the investigator finally came to conclusion to take up such a topic for research which can be beneficial for learning of a language as a whole and language skill as particular. And she made up her mind to work on the topic as presented in the following section.

1.3 Statement of the Problem

Keeping in mind the base of introductory portion and the rationale presented, the investigator decided to select the following problem for the investigation.

The present investigation entitles:

An Exploration in the Development of Language Skills in English through Multimedia Strategy

1.4 Terms Defined

Classical as well as Operational definition of the key terms related to the present investigation are as follows:

Exploration:

- According to **Wikipedia Encyclopedia** (2008)[27],
  "Exploration is the act of searching or travelling for the purpose of discovery."
- According to **Ardictionary** (2011)[28], Exploration means "a careful systematic search."
- For the present investigation, the term "Exploration" refers to evaluate the systematic strategy of multimedia package for development of Language Skills developed by the investigator through experimentation. In other words, the term, 'Exploration' means to measure the effectiveness of multimedia strategy on the basis of the scores achieved at pretest stage and posttest stage; administrated prior to the experiment and after the

experiment respectively, i.e. to analyze the data statistically, gathered during the experiment and to realize the appropriate findings.

Development:

- According to **Carter** (1959)[29], in 'Dictionary of Education', Development refers to

  "Scientific Method" and extension of basic or applied research through which laboratory findings are reduced to practice."

- According to **Coulson and Carr** (1997)[30], in 'Oxford Illustrated Dictionary', Development refers to "n. Developing; developed product etc; (mus) in Sonata or similar Composition, the second section of a moment, containing and elaboration on the theme(s) stated in the first section."

- According to **Brainy Quotes** (2011)[31] , Development refers to, "The act of developing or disclosing that which is unknown; a gradual unfolding process by which anything is developed, as a plan or method, or an image upon a photographic plate; gradual advancement or growth through a series of progressive changes; also, the result of developing, or a developed state."

- The term 'Development', in the present investigation means to mould, to create, to increase interest in Learners for Language Skills through Multimedia Animation Strategy. For the present investigation, the term, 'Development' in the terms of measurement means, the achievement of specific objectives related to Language Skills at the end of the experiment.

Language Skills:

- According to **'Education Dictionary'** (2009)[32] on the website, Language Skills means "the ability to comprehend receptive language and use expressive language to communicate. A student who has good spoken language skills will more easily master reading and writing skills."
- The term 'Language Skills', in the present investigation, refers to comprising four skills, i.e. the skill of Listening, the skill of Speaking, the skill of Reading and the skill of Writing, where Listening skill is the basic skill which is Receptive in nature likewise Reading skill is also receptive in nature, whereas Speaking and Writing skills are Productive in nature.

Multimedia:

- According to **Dictionary of Science and Technology** (1995)[33], Multimedia means, "A combination of Video, graphics, text and audio, using interactive programs sourced from rapid access disks, eg.CD-I, CD-Rom and accessed usually via a computer."
- According to **Wikipedia Encyclopedia** (2008)[34], "multimedia is media and content that utilizes (a medium with multiple content forms)or as an adjective describing a medium as having multiple content forms. In general, multimedia includes a combination of text, audio, still images, animation, video and interactivity content forms."
- According to **Webopedia** (2004)[35], the term 'Multimedia' refers to "The use of computers to present text, graphics, video, animation and sound in an integrated way."
- For the present investigation, the term 'Multimedia', refers to the multimediated animation for selected two stories, two poems and two comprehensions of the old syllabus of English of standard VIII of Gujarat Board. This multimedia included text, sound, video, animation as well as interactivities in the form of activities. In the present investigation, the term 'Multimedia' also refers to Interactive Multimedia CALL programme which is developed by the investigator for developing language skills in English, viz. the skill of Listening, the Skill of Speaking, the skill of Reading, the skill of Writing. In this multimedia, the media components are as follows:

No.	Medium	Mode of Presentation
1.	Multimediated CALL Programme	Audio- Visual
2.	Activities	Audio and Visual

Strategy:

- According to Mintzberg, Henry (1994)[36], "strategy is a plan, a pattern in action, a position and a perceptive vision and direction."
- According to **Johnson and Scholes** (2010)[37], "Strategy is the direction and scope of an organization over the long-term: which achieves advantage for the organization through its configuration of resources within a challenging environment, to meet the needs of markets and to fulfill stakeholder expectations".
- For the present investigation, the term 'Strategy', refers to one pattern of action which has the components of media included for the instruction of the selected topics to

develop language skills. In other word, the term 'Strategy' means a detailed plan of instruction through multimediated CALL programme, Activities and Web Application (multimedia Package) in order to achieve certain specific objectives in students.

1.5 Objectives of the Study

Objectives of the present investigation are presented in two parts as given below:

1.5.1 Major Objectives

The major objectives of the present investigation are as follows:

1. To evolve a multimedia strategy for developing the skill of Listening, Reading, Writing and Speaking in English.
2. To find out the effectiveness of multimedia strategy for cumulative as well as individual development of skill in English.
3. To know the opinions of the students regarding the effectiveness of the multimedia strategy in the development of Language skills in English.
4. To know the reactions of the students on Students' Diary regarding the experiment.

1.5.2 Research Objectives

To realize the major objectives, the following research objectives were formulated:

1. To know the significant difference between the mean scores of achievement in Speaking, Reading, Writing and Listening skills at pretest and posttest stages of the students of Experimental Group-I.
2. To know the significant difference between the mean scores of achievement on Main Criterion Tests at pretest and posttest stages of the students of Experimental Group-I.
3. To know the significant difference between the mean scores of achievement in Speaking, Reading, Writing and Listening skills at pretest and posttest stages of the students of Control Group-I.
4. To know the significant difference between the mean scores of achievement on Main Criterion Tests at pretest and posttest stages of the students of Control Group-I.
5. To know the significant difference between the adjusted mean achievement scores of main posttest of Control Group-I and Experimental Group-I on Speaking, Reading, Writing and Listening by taking IQ, Pretest achievement Scores and Learning Style as Covariates.

6. To know the significant difference between the adjusted mean achievement scores of main posttest of Control Group-I and Experimental Group-I on Main Criterion Tests by taking IQ, Pretest achievement Scores and Learning Style as Covariates.

7. To know the significant difference between the adjusted mean achievement scores of main posttest of Control Group-II and Experimental Group-II on Speaking, Reading, Writing and Listening by taking IQ and Learning Style as Covariates.

8. To know the significant difference between the adjusted mean achievement scores of main posttest of Control Group-II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style as Covariates.

9. To know the significant difference between the adjusted mean achievement scores of main posttest of Control Group-I, Experimental Group-I, Control Group-II and Experimental Group-II on Language Skills by taking IQ scores and learning style scores as covariates.

10. To know the significant difference between the adjusted mean achievement scores of main posttest of Control Group-I, Experimental Group-I, Control Group-II and Experimental Group-II on Main Criterion Tests by taking IQ scores and learning style scores as covariates.

11. To know the significant main effects of Treatment, pretest, gender, area and level of IQ on the adjusted mean achievement scores of main posttest of Control Group-I, Experimental Group-I, Control Group-II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style as Covariates.

12. To know the significant interaction effects of treatment and pretest, treatment and gender, treatment and area, and treatment and level of IQ on the adjusted mean achievement scores of the main posttest of Controlled Group I, Experimental Group-I, Controlled Group II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style scores as Covariates.

13. To know the significant interaction effects of pretest and gender, pretest and level of IQ and pretest and area on the adjusted mean achievement scores of the main posttest of Controlled Group I, Experimental Group-I, Controlled Group II and Experimental Group II on Main Criterion Tests by taking IQ and Learning Style scores as Covariates.

14. To know the significant interaction effects of gender and area, gender and level of IQ, and area and level of IQ on the adjusted mean achievement scores of the main posttest of Controlled Group I, Experimental Group-I, Controlled Group II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style scores as Covariates.

15. To compare between the mean achievements scores of students of all four groups of standard VIII for Language Skills on the basis of Observation Schedules.

16. To know the significant difference of opinions of girls and boys of Experimental Groups regarding the experiment for developing language skills in English.

1.6 Hypotheses

To achieve the research objectives, following hypothesis were formulated:

1. There is no significant difference between the mean scores of achievement in Speaking, Reading, Writing and Listening skills at pretest and posttest stages of the students of Experimental Group-I.
2. There is no significant difference between the mean scores of achievement on Main Criterion Tests at pretest and posttest stages of the students of Experimental Group-I.
3. There is no significant difference between the mean scores of achievement in Speaking, Reading, Writing and Listening skills at pretest and posttest stages of the students of Control Group-I.
4. There is no significant difference between the mean scores of achievement on Main Criterion Tests at pretest and posttest stages of the students of Control Group-I.
5. There is no significant difference between the adjusted mean achievement scores of main posttest of Control Group-I and Experimental Group-I on Speaking, Reading, Writing and Listening by taking IQ, Pretest achievement Scores and Learning Style as Covariates.
6. There is no significant difference between the adjusted mean achievement scores of main posttest of Control Group-I and Experimental Group-I on Main Criterion Tests by taking IQ, Pretest achievement Scores and Learning Style as Covariates.
7. There is no significant difference between the adjusted mean achievement scores of main posttest of Control Group-II and Experimental Group-II on Speaking, Reading, Writing and Listening by taking IQ and Learning Style as Covariates.

8. There is no significant difference between the adjusted mean achievement scores of main posttest of Control Group-II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style as Covariates.
9. There will be no significant difference between the adjusted mean achievement score of main posttest of Control Group-I, Experimental Group-I, Control Group-II and Experimental Group-II on Language Skills by taking IQ scores and learning style scores as covariates.
10. There is no significant difference between the adjusted mean achievement scores of main posttest of Control Group-I, Experimental Group-I, Control Group-II and Experimental Group-II on Main Criterion Tests by taking IQ scores and learning style scores as covariates.
11. There is no significant main effects of Treatment, pretest, gender, area and level of IQ on the adjusted mean achievement scores of main posttest of Control Group-I, Experimental Group-I, Control Group-II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style as Covariates.
12. There is no significant interaction effects of treatment and pretest, treatment and gender, treatment and area, and treatment and level of IQ on the adjusted mean achievement scores of the main posttest of Control Group-I, Experimental Group-I, Control Group-II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style scores as Covariates.
13. There is no significant interaction effects of pretest and gender, pretest and level of IQ and pretest and area on the adjusted mean achievement scores of the main posttest of Controlled Group I, Experimental Group-I, Controlled Group II and Experimental Group II on Main Criterion Tests by taking IQ and Learning Style scores as Covariates.
14. There is no significant interaction effects of gender and area, gender and level of IQ, and area and level of IQ on the adjusted mean achievement scores of the main posttest of Controlled Group I, Experimental Group-I, Controlled Group II and Experimental Group-II on Main Criterion Tests by taking IQ and Learning Style scores as Covariates.
15. There will be no significant difference between the mean achievements scores of students of all four groups of standard VIII for Language Skills on the basis of Observation Schedules.

16. To know the significant difference of opinions of girls and boys of Experimental Groups regarding the experiment for developing language skills in English.

1.7 Scope of the Study

English language holds an important place, as it is one of the most important international language. Apart of the link language, library language and language of trade and commerce, English is one of the mostly used Web languages. Students cannot use web (internet) effectively without the knowledge of English. It shows that we cannot neglect the study of English language. It is the exiting world and that's why the development of the language skills in English is quite necessary for the up-coming new generation.

Besides, the technology has the most influencing use in most of the fields at modern time. It has shown its impact on all the other fields like commerce, trade, business, science, etc. It is also impacting in education for last few years as urban school students have greater exposure on the various forms of Educational Technology, using the potential of computers and following the pedagogy of teaching and learning, which has great impact on the field of education. With its unique features like drill, simulation, animation, tutorial and gaming, it makes teaching and learning more interesting and encouraging for the teachers as well as for the students.

The investigator had selected the topic of developing language skills by realizing its urgency and importance for the students. It is also important as it provides the base of language learning to the students. Results from the various studies, which the investigator referred in the literature review, shows that multimedia interaction opens the doors for different points of view, different ways of behaviour, beliefs, linguistic expressions and style of communication. Multimedia can stimulate more than one sense at a time, and by doing so, also becomes more attention- seeking and attention-holding, too.

Following scopes of the investigation were presumed:

1. The investigation may provide the teachers with new insight and new way of reaching towards the destination, i.e., the development of language skills in the students.

2. This multimedia may help the students for the development of language skills in English without any extra burden.

3. Cartoons, animated animal stories are in general interesting for 11 to 12 years old students. That's why, through this animated stories' presentations, the teacher may be able to develop interest in learning English language skills in students.

4. These multimediated animated stories make the students active participants of the teaching-learning process and their boredom may be reduced.

5. It may become great benefits to the students for the development for language skills as components of the multimedia includes audio-video, text, animation, activities.

6. This investigation may inspire the teachers to use more animations to develop language skills as well as other points related to English language as per their own needs and demands.

7. Through this animated stories, the students may develop their language skills in enjoyable and pleasurable situation which will use of English language.

8. The present investigation may also motivate other further studies in the various fields and subjects.

1.8 Delimitation of the Study

Every investigation has its own boundaries beyond which its result cannot be generalized. The present investigation is no exception. The following are the delimitations of the investigation:

1. The experiment was delimited to the students of standard VIII for the subject of English.

2. The experiment was delimited to Gujarati medium secondary school students of Gujarat Board.

3. Measurement of the effect of the experiment was delimited to some selected moderate variables which are mentioned below:

   Gender, Area, Level of IQ

4. The experiment was delimited to the certain selected media as mentioned below:

   Text, Sound, Graphics, Animation, Music

5. The experiment was delimited to the development of language skills, i.e. Skill of Listening, Skill of Speaking, Skill of Reading and Skill of Writing in English.

6. In the present investigation, only the students of VIII standard had been selected as sample. Besides, not all the students of VIII standard had been selected but only 240 students had been selected and distributed in groups by random assignment method.

1.9 Population and sampling procedure

In the present investigation, the investigator wanted to know the effectiveness of Multimedia for developing language skills in English in the students of VIII standard studying in Gujarati medium schools. So, all the students of standard VIII of Gujarati medium schools had become the population for the present investigation.

For the present investigation, the investigator selected sample from the mentioned population in two stages, as mentioned below:

1.9.1 Sample for Pilot Testing.

1.9.2 Sample for Final Experiment.

1.9.1 Sample for Pilot Testing

For the Pilot Testing of the Experiment, Kailash Manas Vidyalaya, Bhestan had been selected purposively. From this school, six Students were selected as a Sample by incidental purposive sampling. They were selected on the basic of their marks of English subject in VII Standard. The achievers category is presented in table 1.1

Table-1.1

Achievers' Category for Tryout

High	Medium	Law
More than 70 marks	Less than 70 marks but more than 50 marks	Less than 50 marks

Table-1.2

Details at the Sample for Tryout

Name of the School	Gender	Std. VIII Achievers Category			Total
		High	Med.	Low	
Kailash Manas Vidyalaya, Bhestan	Boys	4	4	4	12
	Total	4	4	4	12

Pilot Testing was carried out on selected twelve students as mentioned in table 3.2. For this, "Randomized Control group Pretest-Posttest design" was followed. Opinions of the students were collected on the students Diary and the Opinionnaire at the end of the experiment.

1.9.2 Sample for Final Experiment

For the present investigation sample for the final experiment was selected by incidental purposive sampling. The investigator had selected two schools in the Surat District. One school was from Surat city and one was from Rural area of Surat District.

For the final experiment of the Solomon Four group design, Precidency School, Rander was selected purposively from Surat city and Sanjivini Vidhyalaya, Hazira was selected purposively from rural area of Surat District. From these schools, from all eight standard students, the investigator had selected 30-30 students by random assignment method. The investigator made four groups: Control Group-I, Experimental Group-I, Control Group-II, Experimental Group-II

And students were divided in four groups by lottery method. The investigator prepared the chit of names of students and put them in one bowl and asked one five years old boy to take chit one by one and put them in four groups respectively. Thus thirty students (girls-boys) for Experimental Group-I, thirty students (girls-boys) for Control Group-I, thirty students (girls-boys) for Experimental Group-II and thirty students (girls-boys) for Control Group-II were selected.

Table 1.3

Details of Sample for Final Experiment

No.	Place of Experiment	Std.	Experimental Group-I & II		Control Group-I & II		Total
			Girls	Boys	Girls	Boys	
1.	School from Surat city Precidency School, Rander	VIII	27	33	30	30	120
2.	School from rural area Sanjivani Vidhyalaya, Hazira	VIII	27	33	30	30	120
	Total		54	66	60	60	240

1.10 Research Design

For the present study, experimental research method was used. The study was concerned with the measurement of effectiveness of multimedia on achievement scores on sub-criterion tests and main-criterion test. The investigator selected the experimental design "Solomn Four group design" for evaluating the effectiveness of the multimedia package. The design can be presented as a general format as follows:

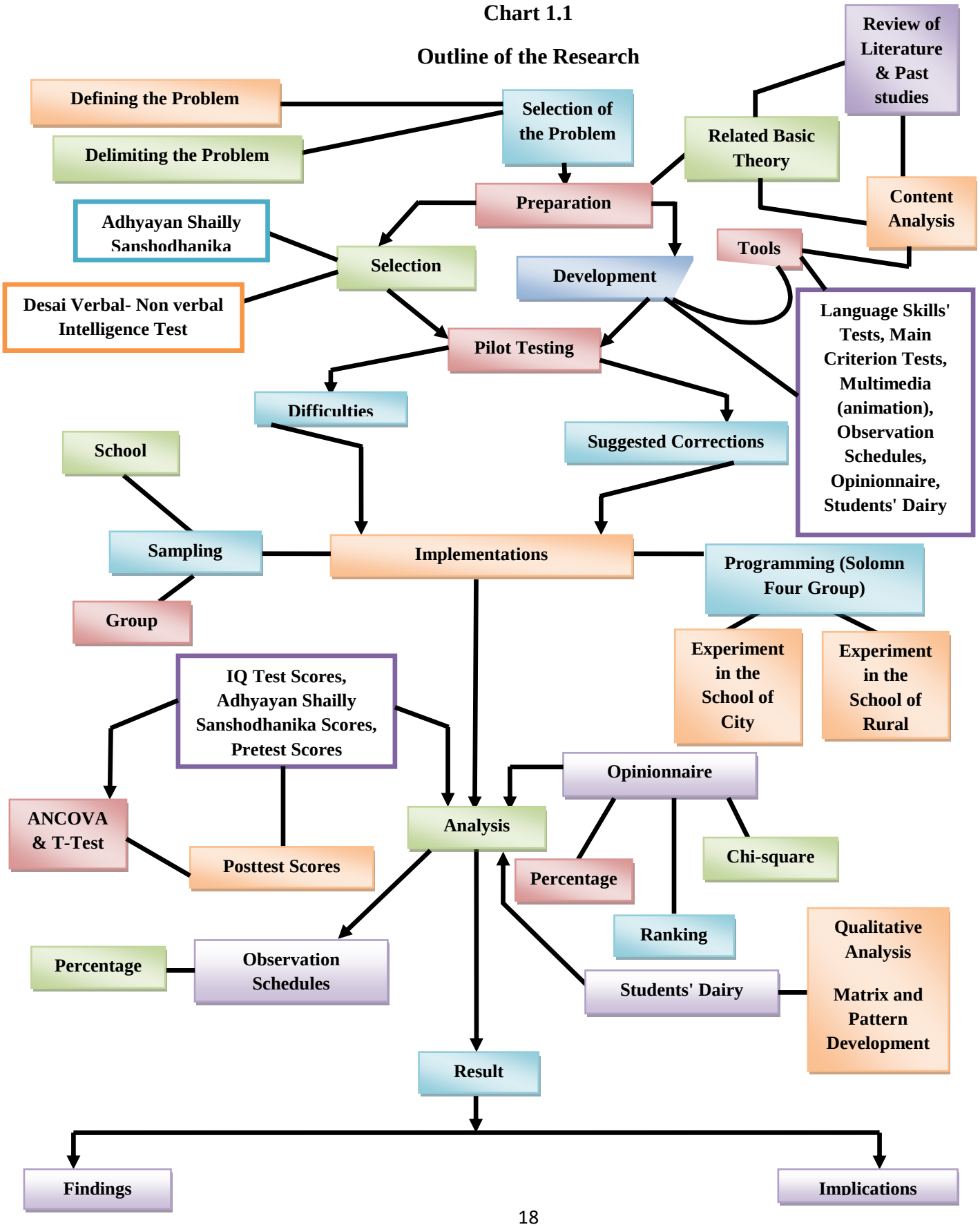
O_1	**C**	**O_2**
O_3	**X**	**O_4**
	C	**O_5**
	X	**O_6**

1.11 Outline of the Research

The Outline of the present research can be presented in the below given chart:

Chart 1.1

Outline of the Research



1.12 Research Instruments

For the collection of data, the investigator used two types of research instruments which are mentioned below:

(i) Instruments for conducting the experiment.

(ii) Instruments for measuring the effectiveness of the experiment.

(i) Instruments for conducting the experiment

- **Animated stories, comprehensions & poems**

The Investigator had selected some stories, comprehensions and poems and had prepared animation on them for conducting the experiment.

Detail of the Stories, Comprehensions & Poems

Making a Parachute, Solar Energy, The Golden Touch, The prince and his Friends, The Moon, Home, Sweet Home

The investigator had decided to reach various language skills of English through multimediated stories, comprehensions and poems. She had followed steps which are given below: **Selection of standard and Unit, Content Analysis, General and specific Objectives**

(ii) Instruments for measuring the effectiveness of the Experiment

(1) Standardized tests

(2) Instruments developed by the investigator

(1) Standardized Tests

For controlling the effect of IQ as a covariate, IQ scores were to be collected and for that purpose “Desai Verbal and Non-Verbal Group intelligence test” was selected as a standardized test.

For controlling the effect of "Adhyayan Shailly" of students , "Adhyayan Shailly" scores were to be collected and for that purpose “Adhyayan Shailly Sanshodhanika” was selected as a standardized test.

(2) Instruments developed by the Investigator

(i) Main Criterion Tests for each skill and each unit

(ii) Main Criterion Test for each skill

(iii) Observation Schedules for each skill

(iv)Opinionnaire

(v) Students' Diary

1.14 Experimentation

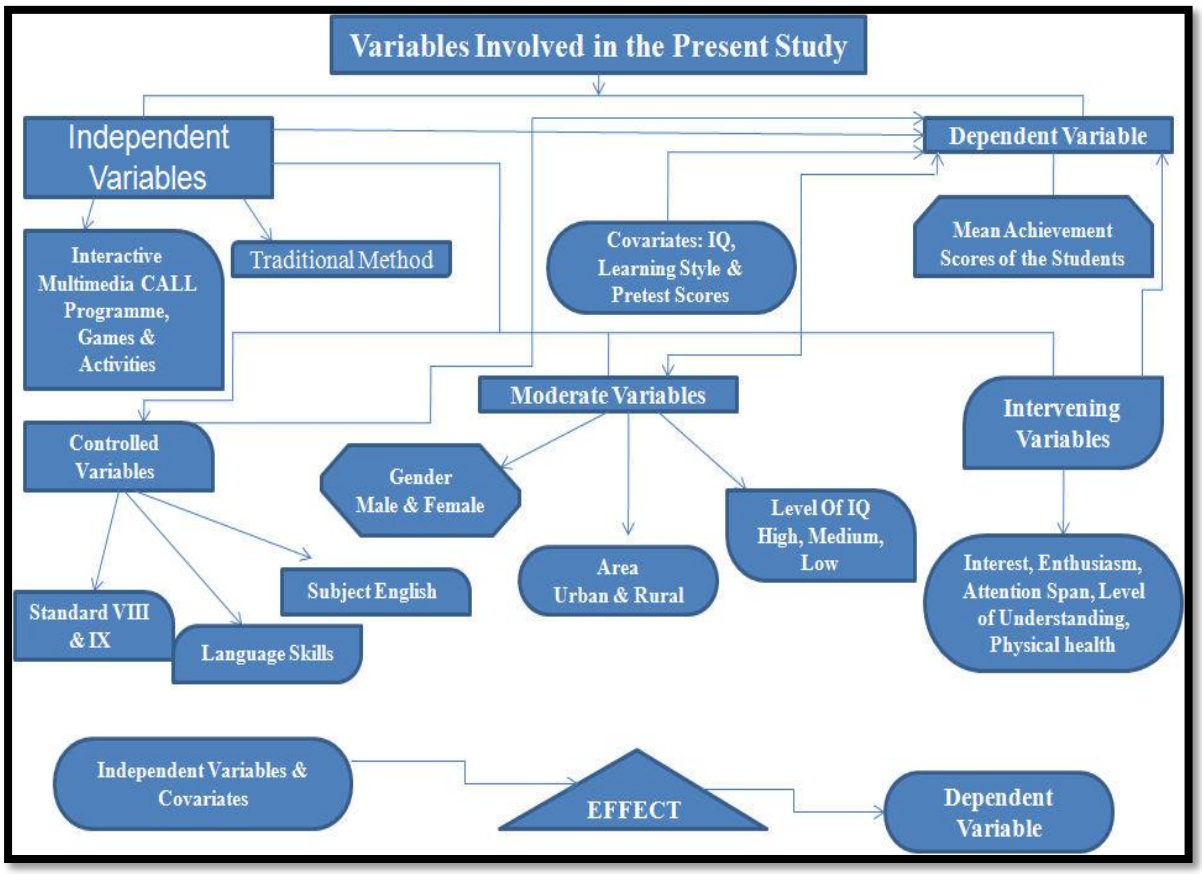
The experimentation is presented below: All Four Groups i.e. Experimental Group-I , Control Group-I, Experimental Group-II and Control groups were given, first K. G. Desai Verbal-Non-verbal Intelligent test, Adhyayan Shailly Sanshodhanika and Students' Dairy. Then, Control Group-I and Experimental Group-II were given various pretests. After the completion of all tests, Experimental Group-I & II were taught through multimediated stories, comprehensions and poems whereas Control Group-I & II were taught through traditional method. After that, all four groups were given sub criterion tests and Main Criterion tests as posttest. After completing the experiment, only Experimental Group-I & II were given opinionnaire to give their opinions regarding the experiment.

1.15 Related Variables

In any experimental design, there are in general two types of variables involved. **Independent and Dependent** And in particular other variables also involved. They are given below: **Controlled variable, Moderate variable, Intervening variable, Correlated variable.** In the present investigation, there were so many variables involved which are mentioned in below given chart No. 1.2.

Chart No. 1.2

Variables involved in the Present Investigation



1.15 Scheme of Data Analysis

For testing the hypotheses, the collected data were analyzed statistically using the selected statistical techniques as mentioned in table No. 1.4

Table- 1.4

Statistical Techniques

Sr. No.	Objective	Hypothesis	Statistical Techniques
1.	1 to 4	1 to 4	Paired sample T- test
2.	5 to 10	5 to 10	Analysis of Covariance (ANCOVA)
3.	11 to 15	11 to 15	Analysis of covariance for unequal cell size by 2 x 2, 2 x 3 factorial design (ANCOVA)
4.	16	16	Chi-Square

1.16 Findings of the Research

1. The correlated t-values for pretest and posttest of Experimental Group-I on Listening Skill, Speaking Skill, Reading Skill and Writing Skill are highly significant at 0.01 level of significance for Urban, Rural and Urban-Rural (Overall) areas, which indicates that there is a good effect of multimedia animation on students of Experimental Group-I of all areas. And students can very well develop the Skill of Listening, Skill of Speaking, Skill of Reading and Skill of Writing through multimedia animation.
2. The correlated t-values for pretest and posttest of Control Group-I on Listening Skill, Speaking Skill, Reading Skill and Writing Skill are highly significant at 0.01 level of significance for Urban , Rural and Urban-Rural (Overall) areas, which indicates that students of Control Group-I of all areas can very well develop the Skill of Listening, Skill of Speaking, Skill of Reading and Skill of Writing.
3. The correlated t-values for pretest and posttest of Experimental Group-I on Main Criterion Tests are highly significant at 0.01 level of significance for Urban , Rural and Urban-Rural (Overall) areas, which indicates that there is a good effect of multimedia animation on students of Experimental Group-I of all areas. And students can very well develop all four skills as well as the content of units through multimedia animation.
4. The correlated t-values for pretest and posttest on Main Criterion Tests for all four skills of Control Group-I is highly significant at 0.01 level of significance for Urban, Rural and Urban-Rural (Overall) areas, which indicates that students of Control Group-I have developed all four skills as well as have understood the content of units.
5. By taking pretest scores, IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Listening Skill, Speaking Skill, Reading Skill and Writing Skill of Urban and Urban-Rural (Overall) areas are highly significant at 0.01 level of significance. The results show that there is a significant difference between the groups of the students on Language Skills. By comparing the adjusted means of the posttest of Experimental Group-I and Control Group-I, it is found that Experimental Group-I has shown a better performance over Control Group-I. It means that the students of Experimental Group-I of Urban Urban-Rural (Overall) areas have developed all Language Skills better than Control Group-I.
6. By taking pretest scores, IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Main Criterion Test I, V and VI of Urban, Rural and Urban-Rural (Overall) areas are highly significant at 0.01 level of

significance. The results show that there is a significant difference between the groups of the students on Main Criterion Test I, V, VI. By comparing the adjusted means of the posttest of Experimental Group-I and Control Group-I of all areas, it is found that Experimental Group-I of all areas have shown a better performance over Control Group-I. It means that the students of Experimental Group-I of all areas have developed all four skills better than Control Group-I on Main Criterion Test I, V, VI.

7. By taking pretest scores, IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Main Criterion Test II, III and IV are highly significant at 0.01 level of significance only for Urban and Urban-Rural(Overall). The results show that there is a significant difference between the groups of the students on Main Criterion Test II, III and IV. There is no significant difference between Experimental Group-I and Control Group-I of Rural area. By comparing the adjusted means of the posttest of Experimental Group-I and Control Group-I of Urban and Urban-Rural (Overall) area, it is found that Experimental Group-I have shown a better performance over Control Group-I. It means that the students of Experimental Group-I of Urban and Urban-Rural (Overall) area have developed all four skills better than Control Group-I. Whereas there is no significant difference in the performance between the Experimental Group-I and Control Group-I of Rural area.
8. By taking IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Language Skills of Urban, Rural and Urban-Rural (Overall) areas are highly significant at 0.01 and 0.05 level of significance. The results show that there is a significant difference between the groups of the students on Language Skills. By comparing the adjusted means of the posttest of Experimental Group-II and Control Group-II of all areas, it is found that Experimental Group-II have shown a better performance over Control Group-I. It means that the students of Experimental Group-II of all areas have developed Language Skills better than Control Group-II.
9. By taking IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Main Criterion Tests of Urban, Rural and Urban-Rural (Overall) areas are highly significant at 0.01 level of significance. The results show that there is a significant difference between the groups of the students on Main Criterion Tests. By comparing the adjusted means of the posttest of Experimental Group-II and Control Group-II of all areas, it is found that Experimental Group-II of all areas have shown a better performance over Control Group-II. It means that the

students of Experimental Group-II of all areas have developed all four skills better than Control Group-II on Main Criterion Tests.

10. By taking IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Language Skills are highly significant at 0.01 level of significance only for Urban and Urban- Rural (Overall) areas. The results show that there is a significant difference among the groups of the students on Language Skills. There is no significant difference between Experimental Group-I and Control Group-I of Rural area. By comparing the adjusted means of the posttest of Experimental Group-I, Experimental Group-II, Control Group-I and Control Group-II of Urban and Urban- Rural (Overall) areas, it is found that Experimental Group -I and Experimental Group-II have shown a better performance over Control Group-I and Control Group-II. It means that the students of Experimental Group-I and Experimental Group-II of Urban and Urban-Rural (Overall) areas have developed Language Skills better than Control Group-I and Control Group-II. Whereas there is no significant difference in the performance among Experimental Group-I, Experimental Group-II, Control Group-I and Control Group-II of Rural area.
11. By taking IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Writing Skill are highly significant at 0.01 level of significance for Urban, Rural and Urban- Rural (Overall) areas. The results show that there is a significant difference among the groups of the students on Writing Skill. By comparing the adjusted means of the posttest of Experimental Group-I, Experimental Group-II, Control Group-I and Control Group-II of all areas, it is found that Experimental Group-I and Experimental Group-II have shown a better performance over Control Group-I and Control Group-II. It means that the students of Experimental Group-I and Experimental Group-II of all areas have developed Writing Skill better than Control Group-I and Experimental Group-II.
12. By taking IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Main Criterion Tests of Urban, Rural and Urban-Rural (Overall) areas are highly significant at 0.01 level of significance. The results show that there is a significant difference among the groups of the students on Main Criterion Tests. By comparing the adjusted means of the posttest of Experimental Group-I, Experimental Group-II, Control Group-I and Control Group-II of all areas, it is found that Experimental Group-I and Experimental Group-II of all areas have shown a better performance over Control Group-I and Control Group-II. It means that the

students of Experimental Group-I and Experimental Group-II of all areas have developed all four skills better than Control Group-I and Control Group-II on Main Criterion Tests.

13. Multimedia animations can be used for teaching Language Skills in English irrespective of Gender of the students, i.e. these multimedia animations are equally effective for both girls and boys.
14. There is no significant effect of pretest on achievement in Language Skills in English of Experimental Group-I and Control Group-I.
15. Multimedia animations can be used for teaching Language Skills in English irrespective of Area, i.e. these multimedia animations are equally effective for both Urban and Rural area.
16. Multimedia animations can be used for teaching Language Skills in English irrespective of Level of IQ, i.e. these multimedia animations are equally effective for the students of Higher, Medium and Lower level of IQ.
17. There is no interaction effect between Gender and Treatment, Treatment and area, Treatment and Level of IQ and Treatment and Pretest on achievement in Language Skills in English.
18. There is no interaction effect between Pretest and Gender, Pretest and Level of IQ and Pretest and Area on achievement in Language Skills in English.
19. There is no interaction effect between Gender and Area, Gender and Level of IQ, and Area and Level of IQ on achievement in Language Skills in English.

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